GP2X User Guide

Version 2.0.0b

Contents

GP2X Information

Product name

* GP2X-F100

General

* CPU: Dual CPU Cores
* ARM920T: Host processor
* ARM940T: Video Coprocessor
* NAND Flash Memory: 64 Mega Byte
* Dimension: 143.6mm* 82.9mm*34mm
* Weight: 161 Gram (Without Battery)
* RAM: SDRAM 64 Mega Byte
* Storage: SD Card
* Connection Type: 2.0 high speed
* O/S: Linux
* Power supply: 2AA
* Display: * 3.5" TFT LCD (Hardware: 16.7 Million Colors / Software: 260,000 Colors)

Video

* Video file: MPEG 4, Dvix 3.11,4x,5x, and Higher, XVID, WMV (7,8,9 Later On) Playback.
* Audio file: MP3, OGG, WMA (Later On)
* Resolution: MAX 720*480 30fps
* Frame Rate: Max 30 fps
* Bit Rate: Video Max: 2500 Kbps
* Audio Max: 384Kbps
* Caption: SMI
* TV-OUT: NTSC, PAL Support

Audio

* Channels: Stereo (L+R)
* Frequency Rate: 20Hz~20KHz
* File: MP3, OGG, WMA (Later On)
* Bit rate sampling: 16bit/8~48KHz
* Equalizer: Normal, Classic, Rock, Jazz, Pop

Included Software

* E-Book Reader
* Image Viewer
* Movie Viewer
* Music Player

Controls

* 8 way digital thumb stick
* 4+1 main action buttons (Thumb stick clicks in for use as an action button)
* 2 shoulder buttons
* Start and Select
* Volume +/-

I/O Ports

* Headphones
* USB 2.0 (not powered)
* EXT Port
* DC Power - 3 Volts, center negative
* Future SDIO Hardware Support

Continuous playback time

* Video: Approx. 4 hours
* Audio: Approx. 6 hours

GP2X Layout

Front of GP2X:

1 – 8 way Joypad
2 – Volume Up/Down
3 – Left Speaker
4 – LCD Screen
5 – A, B, X, Y Buttons
6 – Select button
7 – Start button
8 – Right speaker
9 – Power LED (Green)
10 – Battery LED (Red)

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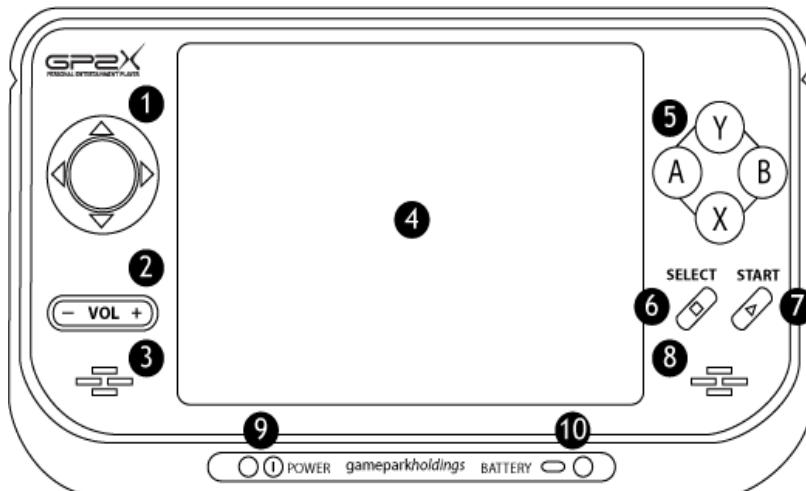
Back of GP2X:

1 – Battery
Compartment
2 – Case Screws
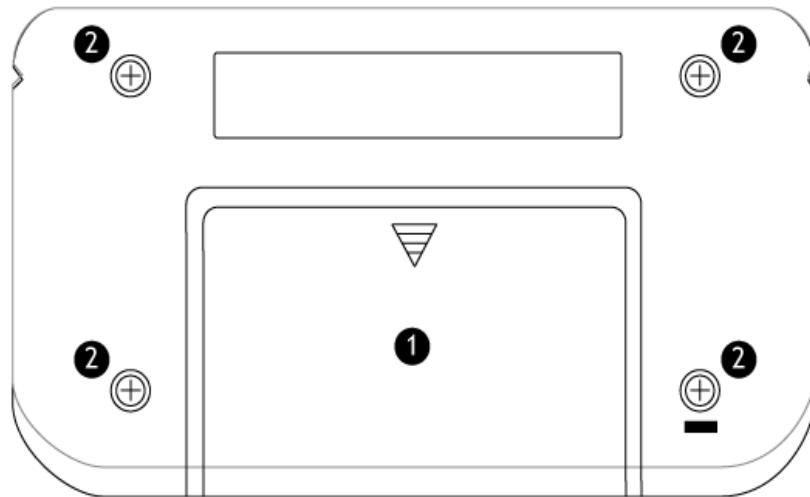
Top of GP2X:

1 – Right Shoulder
Button.
2 – Left Shoulder
Button.
3 – Headphone Socket.
4 – Secure Digital Slot.
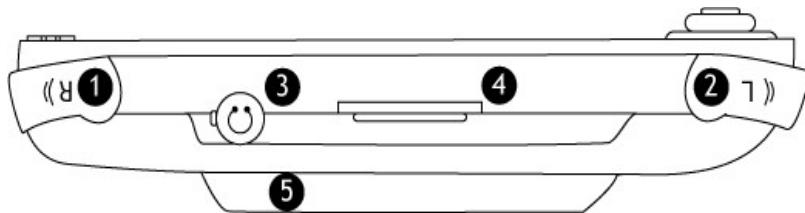
Bottom of GP2X:

1 – Extension Port.
2 – GP2X Wrist Strap
Hole
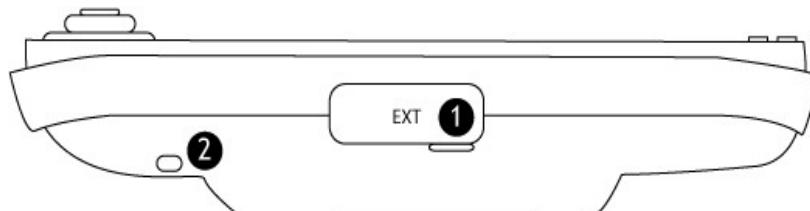
GP2X Accessories

The following official accessories can be purchased separately for your GP2X.

Official Accessories

Power Supply Unit

Hand Strap

Carry Case

Screen Protector

TV-Out Cable

You can purchase these accessories from stores listed in our Useful Information section.

Unofficial 3rd Party Accessories

Serial Cable

Joystick Modification

The serial cable can be purchased at Toyz4Boyz. The Joystick Modification can be purchased from DaveC, private mail him via the GP32x forums here.

Setting Up Your GP2X

You should have the following inside your GP2X box:

> 1x GP2X unit
> 1x USB cable
> 1x Screen Protector
> 1x Pack of 2 AA batteries
> 1x Korean/English Manual

Fitting the Screen Protector

After unpacking the GP2X you should install the screen protector immediately. Carefully remove the shipping film from the GP2X screen by pulling the Red tag on the top right. Now remove the film from the Screen Protector and ensuring there is no dust on the underside of the Screen Protector and on the GP2X screen, carefully place it on the GP2X. The Screen Protector also has a film to protect the screen, using a fingernail or knife, gently unpeel it from a corner of the screen.

There is also protector film on the Power and Battery display panel which can be removed if you wish to.

Fitting the batteries

The GP2X uses two AA batteries to power the device. To fit these, gently push and slide the marked area on the battery cover found on the back of the GP2X towards you. Insert the batteries the correct way as shown in the battery compartment and then replace the battery cover.

Dead batteries can give the impression that your GP2X unit has broke by displaying random patterns on the screen when you switch it on. Please read the Troubleshooting section for more information.

Fitting the Secure Digital Card

The GP2X uses a Secure Digital Card (not supplied as standard) as its storage. To install this insert the Secure Digital Card with the back facing you into the Secure Digital Slot found on the top of the GP2X. The notch should be on the bottom right hand side and when inserted you should hear a click to confirm it is correctly inserted. Do not try to force the Secure Digital Card into the slot or you may damage the Card or the GP2X!

Installing the USB Cable

The GP2X can connect to your PC via a USB cable to transfer your games, utilities, movies, music and E-Books. To do this you will require a free USB port on your PC, it is recommended you have a USB 2 port for faster transferring of files but a USB 1 port will work. Locate an unused USB port on your PC and carefully insert the USB connector into it. To connect the USB cable to your GP2X, remove the rubber protection cover and insert the USB cable into the GP2X.

You are now ready to switch on and enjoy the GP2X!

Using the GP2X for the first time

Switch on the GP2X by pressing the On/Off switch located on the left hand side of the GP2X. The screen should light up and after a second or two the first of two boot screens should display. This should last for several seconds then a second boot screen will display. After around 15 seconds in total (for v2.0.0 firmware, otherwise 25 seconds), the boot process will be complete and you will be presented with the Main Menu screen as shown in *Figure 1*.
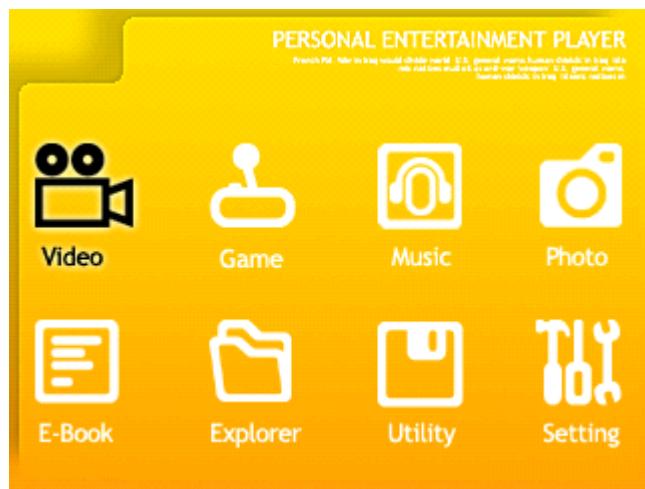

Figure 1

To navigate the menu system you can use the joystick to move between the options. You can press $\mathbf{B}$ to select a highlighted option.

Connecting the GP2X to your PC

Remove the rubber flap found on the right hand side of your GP2X then carefully insert the USB cable into the USB connector on the GP2X. Please also ensure that a Secure Digital card has been inserted into the GP2X otherwise your PC may not recognise the GP2X. Now navigate to the Settings menu and press $\mathbf{B}$ to enter the Settings menu as shown in *Figure 2*.

Figure 2

Now navigate to the **USB** option and press Ⓑ to select it. The **USB Mode** screen will appear as in *Figure 3*.
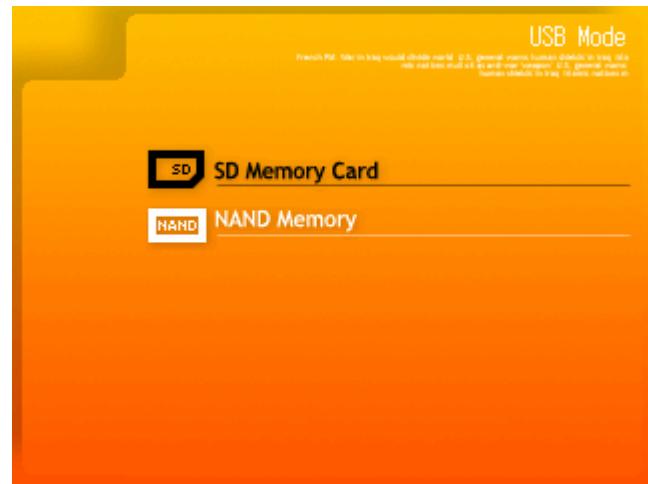

Figure 3

Now navigate to the **SD Memory Card** option and press Ⓑ to select it. The **USB Connection** screen will appear as in *Figure 4*.

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Figure 4

After a few seconds Windows should report that it has found a new USB device and will start to install the hardware. If you are asked for a driver please download the file at http://archive.gp2x.de/cgi-bin/cfiles.cgi?0,0,0,0,15,1473, extract the zip file to a temporary folder and point the hardware install wizard to this file.

Once you are notified that the device is ready to use, open **My Computer** and locate the new Drive that has been created as shown in *Figure 5*.

**Figure 5**

In this example the Secure Digital Card is already formatted but if you have a new card you may need to format it for it to be used on the GP2X. To do this right click on the Secure Digital drive (in this example Drive G) and choose **Format** from the options.

A new window will appear and prompt you for some information. The **Capacity** will vary between different sizes of Cards; in this example a 256 MB Card is shown. The **File System** should be set to FAT32 and the **Allocation unit size** set to **Default allocation size**. The **Volume label** is the name of your drive; you may rename this to an easily identifiable name such as **GP2X Card**. Once you are happy with the settings click on the Start button and the Secure Digital Card will proceed to be formatted.
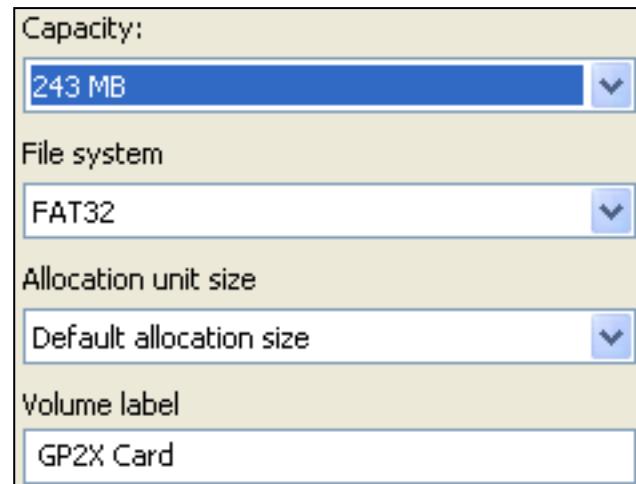
Once the process is completed you can now begin to transfer files to your GP2X.

Managing files on the GP2X

Copying files to your GP2X

Copying files to the GP2X is much like everyday file copying on your hard drive. In the following example we will copy a MP3 to the GP2X.

Connect your GP2X to your PC as shown here. Now select which file you wish to copy to the GP2X by clicking on it once, if you wish to select more files then hold the CTRL button while clicking on a new file to select/deselect it. Once you have chosen your file(s) right click on one of them and choose **Copy** from the options, next click on the GP2X drive (in our case drive G) and choose **Paste** from the options. Your files will now be copied to the GP2X, the time it takes depends on the size and number of files you copied.

Deleting files on your GP2X

Again this is the same as performing a deletion of files on your PC. Connect your GP2X to your PC as shown here. Now select which file you wish to delete from the GP2X by clicking on it once, if you wish to select more files then hold the CTRL button while clicking on a new file to select/deselect it. Now press the **Delete** key on your PC or right click and choose Delete from the options. Your file(s) will now be deleted from the GP2X. You can also perform this task from within the GP2X Explorer, more information here.

Useful Tips

1 - You can create new folders on your Secure Digital Card for the various file types supported on the GP2X. For example: a Games folder to store your games, a Music folder to store your MP3's or a Video folder to store your videos. This way it is easier to keep track of what is installed on your GP2X and you can manage your files more efficiently.

EBooks   Games   Music   Photos   Utilities   Videos   fbgrab

2 - Never remove your Secure Digital Card or switch off your GP2X while files are being accessed. This can result in the loss or damage of files on your Secure Digital Card.

Installing and loading software

Installing the SDL files

The GP2X supports SDL which is a development library for multiple devices and operating systems. Games using SDL may require library files to be installed to the GP2X in order for them to work correctly, you will only need to install these once. You can download the SDL files from the GP2X Archive at http://archive.gp2x.de/

The SDL files are in a Zip archive format so you can simply extract the two files (install_libs.gpu and install_libs.tar.gz) straight to the GP2X drive as you normally would on your PC. Open the file in your preferred .zip extraction program and point it to extract the files to the GP2X drive (in this case the G drive).

Now quit the USB connection screen and return to the main menu. Navigate to the **Utility** option and press ❸. You will be presented with the **Utility Launcher** screen as shown in *Figure 1*.


Figure 1

The three options are described:

> **SD Memory Card** - This is your Secure Digital Card where all data such as games, music and videos are stored.
> **NAND Memory** - This is the internal memory of the GP2X and only important files such as drivers like the SDL files should be installed to here. The reason is that only 20 MB is available for storage so space is more limited than you would get with a Secure Digital Card.
> **EXT Storage** - This is for connecting to external devices.

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Choose **SD Memory Card** from the options and press ⓑ to select it. A program list screen similar to the image in *Figure 2* will be displayed.
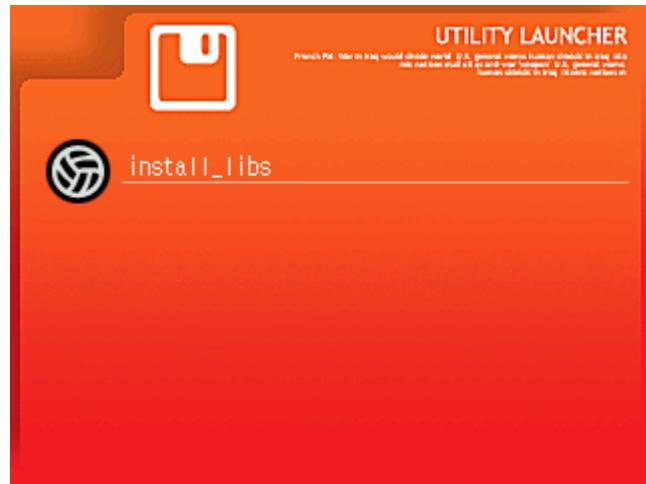

Figure 2

This is the **Utility Launcher** menu, *Figure 2* shows only one file which we just installed but as you use your GP2X, more files will be listed here. Select the **install_libs** file and press ⓑ to run it. The screen will turn black for a few seconds while the necessary files are installed and afterwards you will be returned to the Main Menu.

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Installing and loading a game

In this example we will be using a game called ShanghaiX. If you wish to you can download this game from the GP2X Archive at http://archive.gp2x.de/

Extract the files from the archive to your GP2X drive the same way you done so for installing the SDL files. From the main menu highlight the **Game** option and press ❸ to select it. You will be presented with the **Game Player** screen as shown in *Figure 1*.
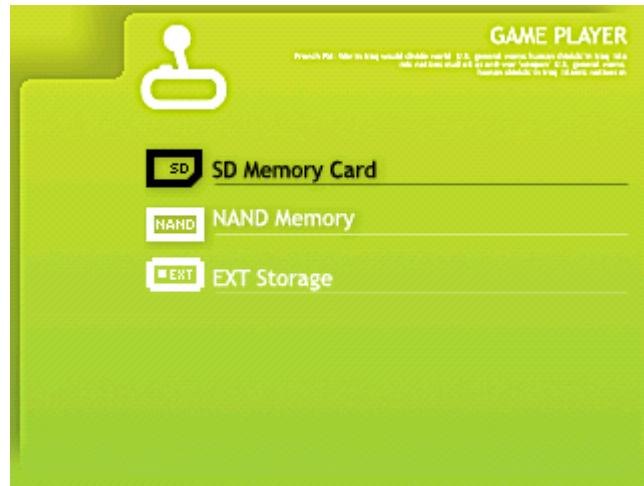
Figure 1

As you will notice this screen is similar to the **Utility Launcher** screen. Choose the **SD Memory Card** option and press ❸ to select it. A program list screen similar to the image in *Figure 2* will be displayed.

Figure 2

Highlight **ShanghaiX** and press ⓑ to select it. The game should now load. Enjoy your first game on the GP2X!

Useful tip

Game and Utility files have different filename extensions even though they are the same format. This is because the Game Launcher screen only displays filenames with the extension **.GPE** and the Utility Launcher screen only displays filenames with the extension **.GPU**.

Viewing Images

The GP2X can view images that are stored on your Secure Digital Card, NAND Memory or External Storage. The following image formats are supported

> JPEG - .jpg extension
> Bitmap - .bmp extension
> Graphics Interchange - .gif extension
> Portable Network Graphics - .png extension

From the Main Menu, choose the **Photo** option and press **B** to select. You will be presented with the **Photo Viewer** screen as shown in *Figure 1*.

Figure 1

Choose the **SD Memory Card** option and press **B** to select it. An image list screen similar to the image in *Figure 2* will be displayed.

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Figure 2

Highlight the image you wish to view and press 🅑 to select. After a second or two, depending on the size of the file, your image will be displayed.

Pressing the 🅨 button will display an options bar as shown below.

        Z IN - Zooms in on the chosen photo.
        Original - Restores the chosen photo to the original size.
        Z OUT - Zooms out on the chosen photo.
        R LEFT - Rotates the chosen photo 90 degrees to the left.
        R RIGHT - Rotates the chosen photo 90 degrees to the right.
        C LEFT - Comic book function.
        C RIGHT - Comic book function.
        FIT - Fits the chosen photo to the screen size.

Pressing the 🄛 or 🅡 shoulder buttons on your GP2X will automatically load and display the previous or following image on your Secure Digital Card.

To return to the list of images press the 🅧 button, and to return to the Main Menu press the ▶ button.

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Playing Music

The GP2X can support the following audio formats:

MP3 - .mp3 filename extension
OGG - .ogg filename extension

From the Main Menu, choose the **Music** option and press 🅑 to select. You will be presented with the **Music Player** screen as shown in *Figure 1*.
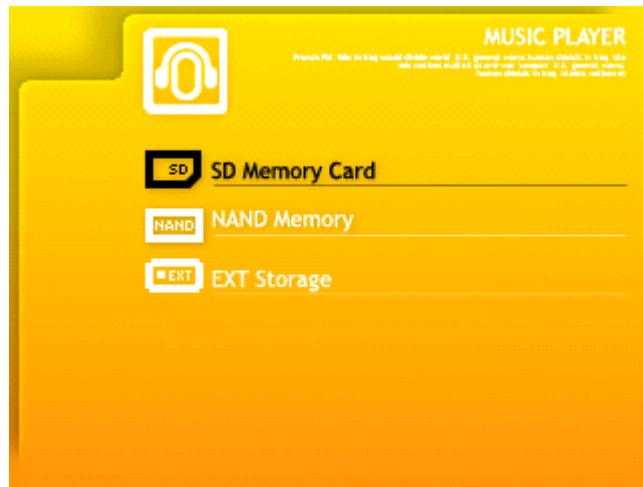

Figure 1

Choose the **SD Memory Card** option and press 🅑 to select it. An audio list screen similar to the image in *Figure 2* will be displayed.

Figure 2

Choose the song you wish to listen to and press ⓑ to select. The audio player will then appear and start to play your chosen song as shown in *Figure 3*.
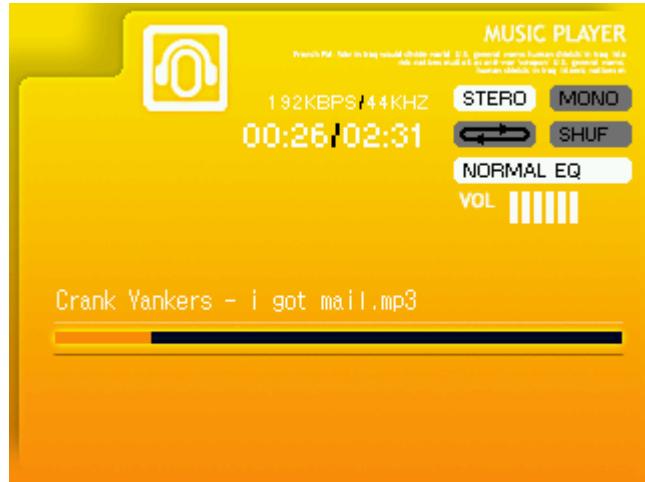

Figure 3

Pressing ⓨ will show or hide a series of options for the player. These are:

⏮ Previous Track

⏭ Next Track

⏪ Skip Backwards

⏩ Skip Forwards

▶ Play

⏸ Pause

⏹ Stop

⏏ Open a new file

🔀 Equalizer

Use the joystick to change between the options and press ⓑ to select. The Equalizer has eleven presets to suit the style of music. These are Normal, Rock, Pop, Jazz, Classic, Dance, Heavy Metal, Disco, Soft, Live 3D and Hall. To change between these highlight the Equalizer option and press ⓑ to cycle through the presets.

The Volume buttons found on the GP2X can be pressed to increase or decrease the volume in 10 settings. You can also lock the buttons and turn the screen off and on by pressing ▭ to save battery life and also avoid unnecessary button pressing. To exit the Music Player press ⓧ twice to return to the file list screen or press ⬛ to return to the Main Menu.

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Viewing Movies

The GP2X can support the following file formats:

AVI - XVid

From the Main Menu highlight the **Video** option and press ⓑ to select. The **Movie Player** screen will be displayed as in *Figure 1*.
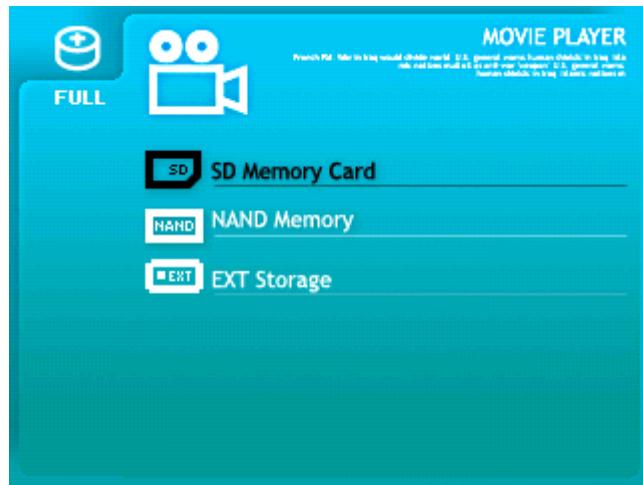

Figure 1

You can press ⓨ to change the CPU speed for the movie player, there are three settings; Full (200 Mhz), Normal (166 Mhz) and Save (100 Mhz). This is useful if you wish to conserve battery life but some movies may play slower or skip frames. The current setting can be found in the top left of the screen shown by the icons below.

Once you are happy with your CPU speed setting, choose the **SD Memory Card** option and press ⓑ to select it. The **Movie Player** file list screen similar to the image in *Figure 2* will be displayed.
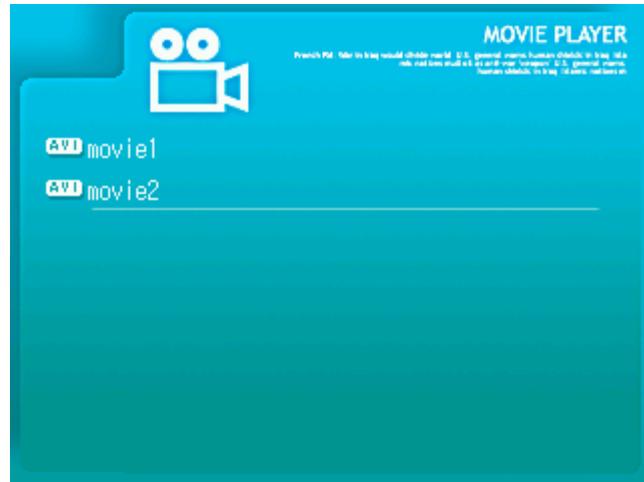
Figure 2

Highlight the video you wish to view and press 🅑 to select. A message will display that your video is being loaded and then after a second or two your chosen video will start to play.

Pressing 🅨 will show or hide a series of options for the player.

These are:

⏮ Previous Video
⏭ Next Video
⏮ Skip Backwards

▶▶ Skip Forwards

▶ Play

❚❚ Pause

■ Stop

⏏ Open a new file

Use the joystick to change between the options and press **B** to select. The Volume buttons found on the GP2X can be pressed to increase or decrease the volume in 10 settings. To exit the Video Player press **X** to return to the file list screen or press ▶ to return to the Main Menu.

Useful tip

The movie player now supports a bookmark feature that allows you to resume a video that you have stopped during playback. Upon reloading the video you will be asked if you wish to resume playback at the point where you stopped.

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Reading E-Books

The GP2X can read E-Books in the .TXT format. Word wrapping should be disabled to ensure the best format to view the E-Book as currently the GP2X E-Book viewer can only display 54 characters per line instead of the usual 80 characters per line.

From the Main Menu highlight the **E-Book** option and press **B** to select. The **E-Book Viewer** screen will be displayed as in *Figure 1*.
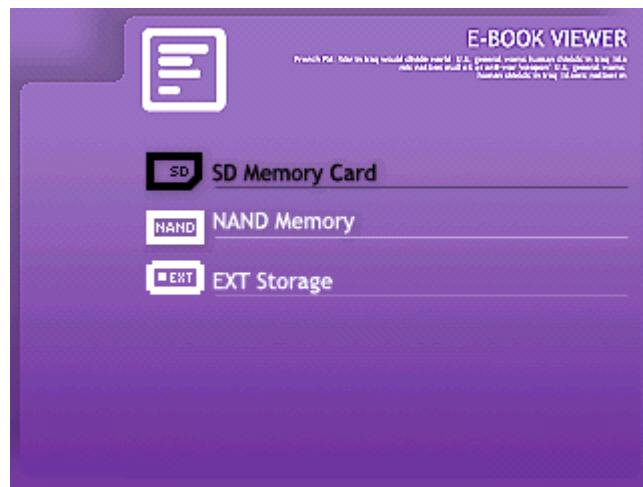
Figure 1

Choose the **SD Memory Card** option and press **B** to select it. An **E-Book** file list screen similar to the image in *Figure 2* will be displayed.

Figure 2

Highlight the E-Book you wish to view and press ❸ to select. Your chosen E-Book will be loaded and displayed.

The following controls are available to use when reading an E-Book:

⊕ Scroll the page one line up
⊕ Scroll the page one line down
🄻 Scroll the page one page up
🅁 Scroll the page one page down
❶ Display settings screen
❷ Return to the E-Book file list screen
▶ Return to Main Menu

The E-Book viewer has an automatic bookmark feature that will save the current page number if you exit the E-Book viewer or switch off your GP2X.

Pressing ❶ will display a settings screen as shown to the right.

Here you can change the colour of the text and its background and also select a True Type Font (.TTF). Press the joystick Left and Right to change the colours and Up and Down to change between the three options.

To load a new True Type Font, choose the font select option and press ❹ to display the font loader screen. Navigate to your installed fonts with the Joypad, pressing ❷ to change folder and then when you have located the font you wish to use, press ❸ to select the True Type Font.

Press ❸ to confirm the changes and you will be returned to your E-Book with the new changes applied.
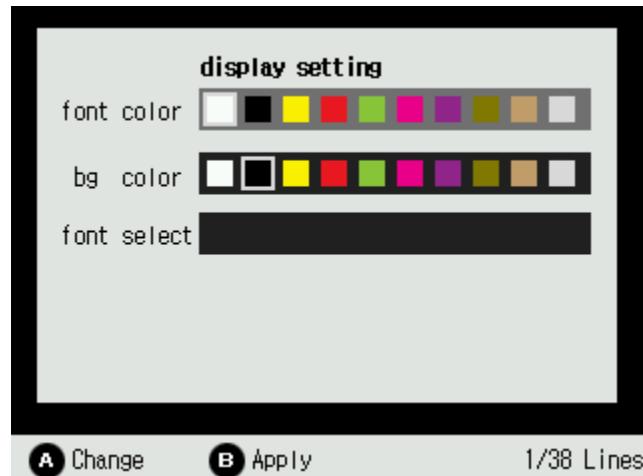
Useful tip

You can use your True Type fonts from Windows on the GP2X. You can find .TTF files in your */Windows/Fonts* folder.

Using Explorer

The GP2X has a built in File Explorer that allows you to view folders and files on your Secure Digital Card and perform file deletion, copying and moving.

From the Main Menu highlight the **Explorer** option and press ❸ to select. The **Explorer** screen will be displayed as in *Figure 1*.
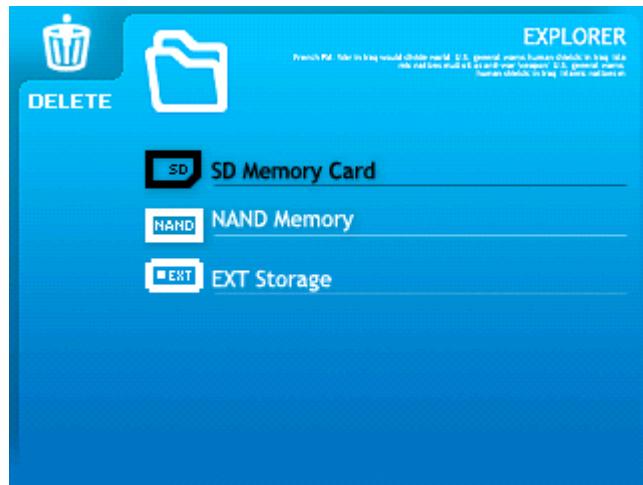
Figure 1

Choose the **SD Memory Card** option and press ❸ to select it. An **Explorer** file list screen similar to the image in *Figure 2* will be displayed.

Figure 2

http://www.emuholic.com/

Use the joystick to navigate through the folders and files. To view a folder press ⓑ and to exit the folder press ⓧ. Three file functions can be performed; Delete, Copy and Move. You can cycle between them by pressing ⓨ and can be seen in the top left corner.

| DELETE | COPY | MOVE |

You can select multiple files and folders by pressing ▭, a small tick beside the file or folder will appear to confirm it has been selected.

☐ FILE File not selected   ☑ FILE File selected

☐ 📁 Folder not selected   ☑ 📁 Folder selected

Select your files or folders you wish to Delete, Copy or Move as shown for example in *Figure 3* below. The *rockstar* folder and *rockstar.gpe* file have been selected

Figure 3

If you wish to Delete the selected files or folders press ⓨ to select the Delete function and then press ⓐ. A message box will appear and ask you to confirm you wish to delete the files and folders.

To Move or Copy the selected files or folders, navigate to the folder you wish to Move or Copy the files or folders to, and press ⓐ to Move or Copy them. To exit Explorer press ⓧ to return to the file list or ▶ to return to the Main Menu.

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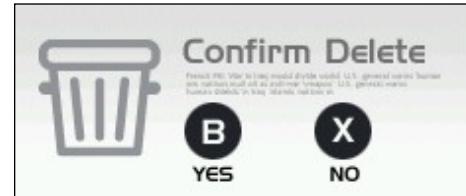
Using the Settings menu

From the Main Menu highlight the **Setting** option and press ⓑ to select. The **Settings** screen will be displayed as in *Figure 1*.

**Figure 1**

Six options are available to choose from, these are:

        T-Mode - A diagnostic tool for your GP2X
        Battery - Shows the battery level
        USB - Connects the GP2X to your PC
        TV-Out - Activate the TV-Out feature
        Info - Provides some information on your GP2X.
        LCD - Adjust the LCD settings for your GP2X.
        System - Change various system settings.

T-Mode

This allows you to make some basic tests on your GP2X. There are seven screens in total, to change screen press ⓛ and ⓡ at the same time.

Screen 1 - Shows the manufacturer date, firmware revision and your GP2X serial number.

Screen 2 - Shows a joystick and button test. You can press any of the

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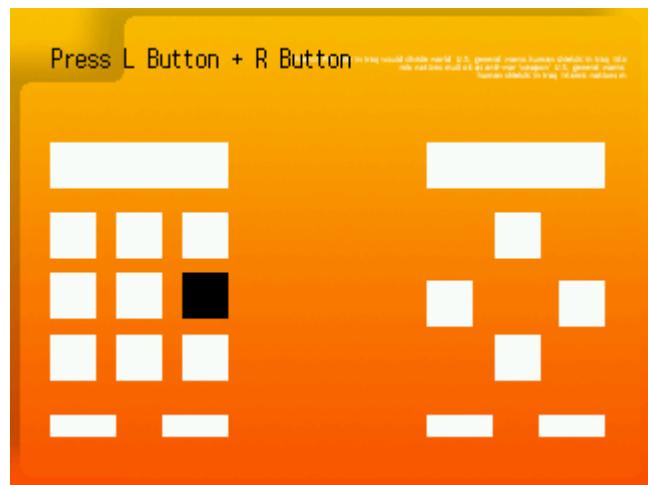
joystick directions and buttons to check they are working.

Screens 3 to 7 - Displays black, white, red, green and blue backgrounds to check the colour display on the screen and any possible dead pixels.

Battery

This screen shows the battery life left on your GP2X. Three levels are displayed; Empty, Medium and Full so even if the screen is reporting your battery as empty you may still have a fair amount of battery life left.
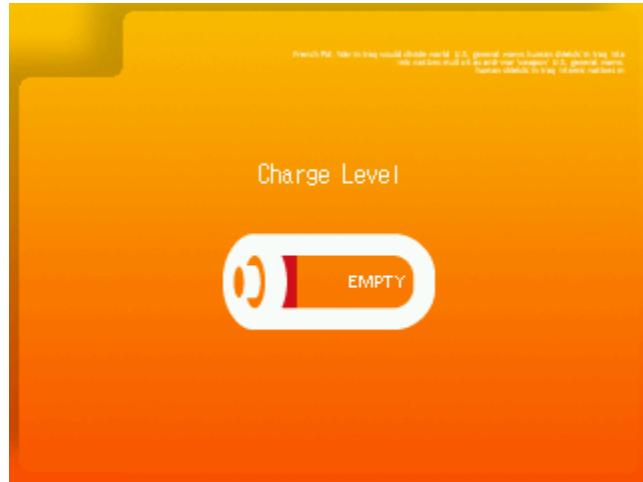
USB

Choosing this menu option will connect your GP2X to your PC. Please refer to Page 9 for more information.

TV-Out

Choosing this menu option will display the TV-Out screen. If you have a TV Out cable you can display the screen on your TV. Here you can choose to output in NTSC or PAL format. Press ❌ to cancel TV-Out to TV or press 🅱 to activate TV-Out.
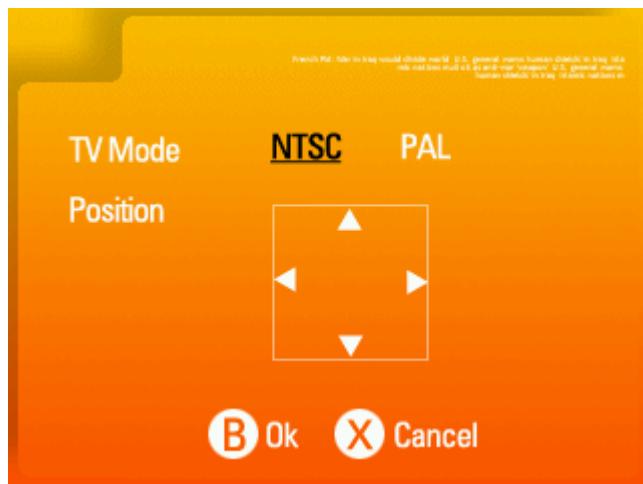
Info

This screen shows your GP2X version number, model number, serial number and some copyright information.

The serial number shows the date of manufacturer (2005.11.09), firmware version (GP2XV001) number and your unique GP2X serial number (partially censored in the screenshot).
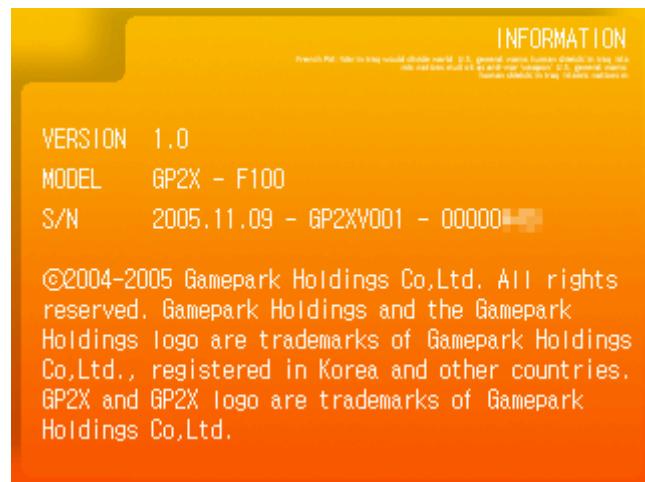
LCD Adjustments

Here you can change the LCD settings. Move the slider by pressing Left or Right on the joystick until the picture is stable. When you are happy with the setting press Ⓑ to exit and save the setting, or press ⓧ to exit and not save.

System

The System menu has many settings to configure and has its own section on the following page with more detailed information.

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System Settings

The System Settings screen can be found starting from the Main Menu, highlight the **Setting** option and press ❸ to select and then choose **System** and press ❸ again to select. The **System** screen will be displayed as in *Figure 1*.
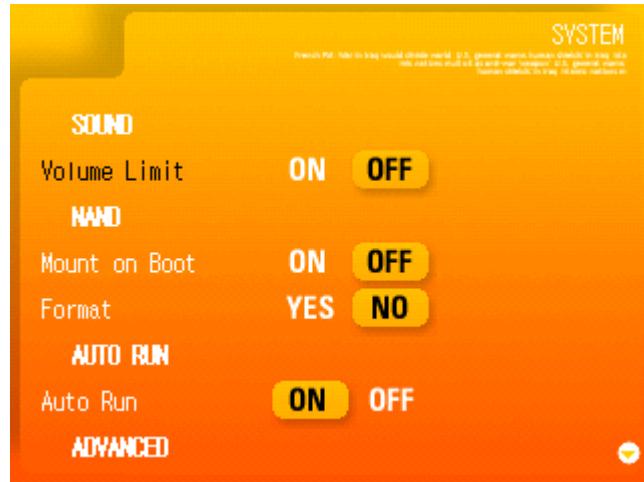
Figure 1

SOUND

Volume Limit – This option allows you to choose if you want the volume to be set at a limit which is safer for your ears. Press left or right on the Joypad to enable or disable this feature.

NAND

Mount on Boot – This option will automatically connect external devices connected to your GP2X. More information on this will be added soon when the official Breakout Box is released.

Format – Enabling this option will delete the user part of the GP2X NAND memory, this is the area where you can store games, media etc. The process may take a few minutes to complete once started.

AUTO RUN

Auto Run – This feature allows you to automatically run a program when the GP2X is switched on. A program named *autorun.gpu* should be put the root of the Secure Digital Card or NAND and each time the GP2X boots this file will be loaded before the menu.

ADVANCED

Menu Extension – This option allows you to configure some of the more advanced settings for the GP2X. To view these options press left on your Joypad to enable them. Once enabled, the **Advanced** options will be displayed as shown in *Figure 2*, further options can be found by scrolling down the screen.
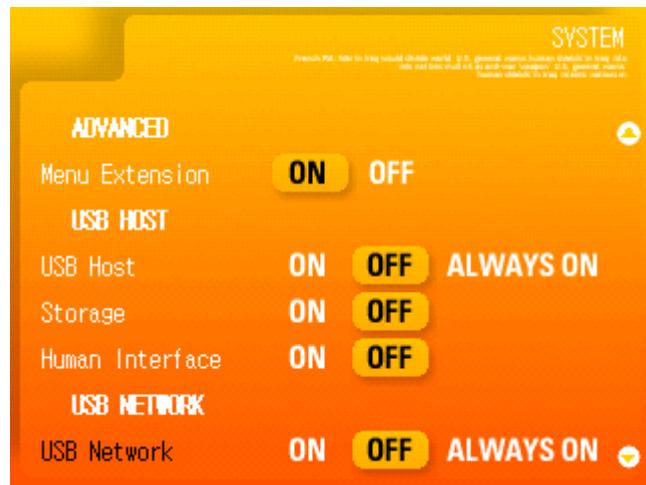
Figure 2

USB HOST

USB Host – Enable or disable the USB Host feature.
Storage - Enable or disable the Storage feature.
Human Interface – Enable or disable the Human Interface feature which allows external peripherals such as joysticks and mice to be connected to the GP2X.

Moving further down the screen will present you with further options as shown in *Figure 3*.

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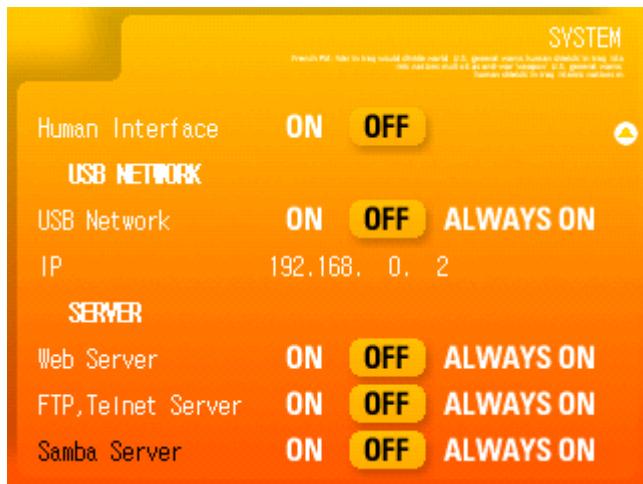
Figure 3

USB NETWORK

USB Network - Enable or disable the network connection.

IP - You can set the IP address for your GP2X here. For simplicity you should set this to your local network range for example 192.168.0.x or 192.168.1.x, the x value should be changed to an available octet on your network, if you are unsure try a higher number such as 200. You can change the numbers by highlighting them and pressing ⒶA or ⒴Y to increase or decrease the values.

SERVER

Web Server - Enable or disable the GP2X web server. You can put files on the */usr/gp2x/www* path on your GP2X then access them via the above *IP Address* or by typing *//gp2x* into your browser.

FTP, Telnet Server - Enable or disable the FTP and Telnet Server. The login details are 'root' as the username and leave the password empty. The FTP address should be the *IP Address* set above. Files uploaded to the FTP can be found in the */root/* folder on your GP2X.

Samba Server – Samba is feature that allows you to transfer files between other Samba devices such as your PC or even your Xbox. The usage of this feature is out of the scope of this user guide so please visit http://www.samba.org/ for more information.

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Troubleshooting

GP2X does not switch on

- Check that you have correctly inserted the batteries and that they have not run out of power.

GP2X displays random coloured lines when switched on or during use

- Check that your batteries have not run out of power. The display gives the impression that the GP2X unit is broke but it is in fact because the batteries are dead. Use a fresh pair of batteries and try again.
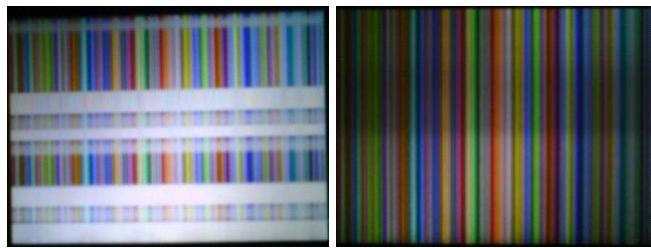
Examples of screen display when batteries are dead

USB is not found or does not connect

- Ensure that the cable is fully inserted into both your PC USB port and your GP2X
- Check that the Secure Digital card is correctly inserted into the GP2X as described here. A Secure Digital card is required for the PC to recognise the GP2X.
- If your PC does not find your GP2X when connected to the USB, try removing all other USB devices and then rebooting your PC. Now connect your GP2X to your PC as shown here. If your GP2X is found by your PC you can now reconnect your other USB devices.

Secure Digital card cannot be accessed on the GP2X

- Check that the Secure Digital card is correctly inserted into the GP2X as described here.
- Ensure that you have the correct files on your Secure Digital card, for example if trying to watch a Video that there is at least one .avi file present on your card. Use the Explorer menu to check properly.
- Check that your Secure Digital card is properly formatted as described here.

Firmware update does not show the message box

- This is a known problem and should be fixed in a future update. This happening means that your GP2X firmware cannot currently be updated. You can download a Firmware Updater (currently v1.1.0) at http://archive.gp2x.de/which will update your GP2X a second way.

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Headphone socket or speaker problems
- This is a known problem with some GP2X units. Please read this post on the GP32x forums for more information.

GP2X boots as far as the second green Loading screen then does nothing
- If the Main Menu does not appear after 30 seconds or so the boot process may have failed. Switch the GP2X off, wait a few seconds and try again. If it fails again try booting the GP2X without the Secure Digital card inserted.

Joypad is not always responding to input
- If this is a regular occurrence on all software you can remove the top of the joystick by gently pulling it from the GP2X. Check there is no debris inside.

Useful Information

GP2X News Sites (English)

Emuholic – http://www.emuholic.com/ - Official homepage for the GP2X User Guide and we also post the latest handheld news for GP2X, GP32, GBA, DS, PSP and the Zodiac.
GP32X - http://www.gp32x.com/ - News for the GP32 and GP2X.
GP2X Emulation - http://gp2x-emulation.dcemu.co.uk/ - News for the GP2X.
My GP2X - http://www.mygp2x.com/ - Blog style news for the GP2X.
GP2X User - http://www.gp2xuser.com/ - News for the GP2X

GP2X News Sites (Non English)

GP32Spain - http://www.gp32spain.com/ - Spanish GP2X and GP32 news.
GP2X.de - http://www.gp2x.de/ - German GP2X news.
GP2Xfr - http://www.gp2xfr.info/ - French GP2X news.
GPain - http://www.gpain.com/ - Korean GP2X news.
GP2Mania - http://gp2mania.com/ - Korean GP2X news.

GP2X Resources

GP2X Archive - http://archive.gp2x.de/ - The one stop site for all GP2X releases.
PD Roms - http://pdroms.de/ - Archive for GP2X releases.
GP2X Wiki - http://wiki.gp2x.org/ - Wiki for the GP2X
GP2X.Letter - http://news.gp2x.info/ - Newsletter for the GP2X.

GP2X Stores

GP2X (official distributors) - gp2x.co.uk/
GP32Z – www.gp32z.com
GP2X.de - shop.gp2x.de/

IRC Channels

#GP2X on EFNet - irc://irc.efnet.org/gp2x - General chat for GP2X
#GP2XDEV on EFNet - irc://irc.efnet.org/gp2xdev - Development chat for GP2X

Firmware Upgrading and Installing Software Updates

Firmware flashing

Download the latest firmware update from http://archive.gp2x.de/ in the Firmware section. In this example we are using the Firmware v2.0.0 released on 28th April 2006. Using your preferred archive extraction tool, open the file *gp2x-f100_200_060428.zip* and extract all the files to your Secure Digital card. There should be nine files on your Secure Digital card:

> gp2xboot.img
> gp2xfs.tar.gz
> gp2xkernel.img
> gp2xnand.tar.gz
> gp2xsound.wav
> gp2xyaffs.img
> GPL.txt
> LGPL.txt
> License.txt

If these files are not present on your Secure Digital card check that the *gp2x-f100_200_060428.zip* file has the above files and extract them again to the Secure Digital card.

Double check that your batteries are fully charged or your power adaptor is connected and that all files are present on the Secure Digital card. When you have done so, switch on the GP2X, do NOT switch off your GP2X or remove the Secure Digital card at any time during the update as it may result in an incomplete firmware flash and break your GP2X.

After the first boot screen you will see the first stage of the update which is shown on the right. This step takes around one minute but times may differ so please be patient.

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After this is complete you should see the familiar Green loading screen for a few seconds then the second stage of the update should begin as shown on the right. This process should take around one minute but may differ for you.

NOTE: When upgrading from v1.4.0 (or earlier) firmware to v2.0.0 your GP2X may stay at the Green loading screen for a long time. If after a few minutes you do not see the *Now Patching* screen above, switch off your GP2X. While holding both the START and SELECT buttons together, switch on the GP2X and hold the buttons until the *Firmware Upgrading* screen appears. The upgrade should work fine after doing this, the reason for this is that changes are made to the firmware and it needs to be rebooted for it to continue properly.

Once the second stage is complete the third and final stage will begin. This prepares the NAND for usage and should take around 30 seconds to complete, in one case this took a few minutes so be patient and let it finish.

Once completed, the GP2X will load the Main Menu and you can use your GP2X as normal. Version 2.0.0 introduces a new safer method up upgrading the firmware in the future and you can only initiate an upgrade while holding START and SELECT when switching on the GP2X.

Useful tip

- Never download or install a firmware update from an untrusted source. The update may be fake and damage your GP2X. If you are unsure, ask on one of the forums before installing. The GP2X Archive at http://archive.gp2x.de/ is a trusted site but you should always check beforehand.
- If you are unable to upgrade your firmware due to the SD Card bug which prevents the firmware being updated. You can download an Alternative Firmware Updater (currently v1.4.0) from http://archive.gp2x.de/ in the Firmware section which will update your GP2X a second way.
- If the worst happens and your GP2X is no longer booting due to a failed firmware upgrade please visit http://www.distant-earth.com/gp2x/ for a way to 'unbrick' your GP2X. This method fixes most cases of failed firmware upgrades.

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Customising the menu graphics

You can customise the menu graphics on the GP2X to suit your taste. There are already a number of custom skins available for you to use such as the one shown on the left called Tux'N'Tosh by Sonic-NKT.

You can find many GP2X menu graphic replacements at http://archive.gp2x.de/ in the Skins - GPH Linux section. In this example we will install the Tux'N'Tosh skin but the process is the same for any other.

Download and extract the Tux'N'Tosh_GP2x-theme.zip to the root of your Secure Digital card. There should be around 170 files (this varies between skins) in the root and the following folders:

> imgbattery
> imgcommon
> imgebook
> imgexplorer
> imggame
> imgimage
> imgmain
> imgmovie
> imgmusic
> imgsetting
> imgtestmode
> imgutil

Now highlight Utility from the main menu and press B to select. Choose the SD Memory Card option and press 🅑 to select it. In this example the file to run is named *imgall* but the name may vary between other skins, there should only be one *.gpu* file in the package so run that. Once run, the screen will display a black background while the files are being copied to the NAND memory. Once it is complete you should be returned to the main menu and your new menu graphics will be shown. You can now delete the files from your Secure Digital card.

Developing for the GP2X introduction

Note: I will rewrite this section shortly to use Hardware Accelerated SDL.

First download DevkitGP2X from http://archive.gp2x.de/ in the Development Utilities section. Run the file that was downloaded and install it to c:\devkitgp2x\. You will also need MinSys installed which you can download from http://www.devkitpro.org/. Don't forget to include a PATH to the MinSys folder, more information can be found at http://www.devkitpro.org/setup.shtml

Next download Theoddbot's GP2X SDL libraries at http://archive.gp2x.de/cgi-bin/cfiles.cgi?0,0,0,0,19,1207. Extract this file to a temporary location on your PC. Now locate the extracted folder and select and copy all the folders as follows:

        bin
        etc
        include
        info
        lib
        main
        share

Now go to your c:\devkitgp2x\ folder and paste the above folders. You will be asked if it is OK to overwrite some files and folders, choose Yes for all of these prompts.

Please refer to the GP2X Wiki at http://wiki.gp2x.org/wiki/Getting_started_with_GP2X_development for more information on how to set up your development environment for various compilers and IDEs.

I have provided a SDL Test Program project for you to test your development setup; you can download it at http://archive.gp2x.de/cgi-bin/cfiles.cgi?0,0,0,0,46,1047. Extract this file to a folder on your PC and from the command prompt type 'make' and press return.

The demo project should now start to compile and after a few seconds will finish. You should now have a new file named **sdltest.gpe**, copy this file and the /sdltest/ folder to the root folder of your GP2X and from the Game menu select **sdltest**. After a few seconds while the program is loading, a menu containing the tests should appear. Use the joystick to navigate the options and press the ✖ button to select.

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Note – work in progress section.

Using a Serial/USB cable

The GP2X supports serial data to your PC for debugging purposes via a Serial cable that can be purchased at Toyz4Boyz or can be made here. An alternative method is possible via your USB cable included with your GP2X but you do not gain the full functionality of a Serial cable. If you have a Serial cable you can skip the following section as you do not need to setup the connection for USB.

Setting up the USB Serial cable connection

As the USB serial cable is not a proper serial cable you need to perform a few tasks before you can use the USB cable as a serial cable. The first task is to install the drivers for your PC, this is only needed to be done once. Download the GP2X USB Serial drivers from the GP2X Archive here.

Extract the files to your PC and copy the *bash.gpe* and *g_serial.o* files to your GP2X. Switch on your GP2X with the USB cable connected to both the GP2X and your PC and once booted, run the *bash.gpe* file. The GP2X should display a black screen and after a few seconds you will be prompted on your PC to install a Gadget Serial device.

Locate the extracted *gserial.inf* file from the drivers above and follow the normal procedure for installing new hardware. Once this is complete the USB serial cable almost ready for use.

The following must be performed each time you wish to use the USB Serial cable. Following the same procedure as above, switch on the GP2X with the USB connected to both the GP2X and PC and once booted run the *bash.gpe* file. The GP2X will display a black screen as before; this is normal and won't display anything else until you execute a program using your PC. The PC will now be ready to receive data from your GP2X with a suitable program as explained in the following section.

Using the Serial cable

Windows users can use the HyperTerminal program which is located in the Accessories > Communications folder. Once loaded, create a new connection with the following settings:

> Bits per second: 115200
> Data bits: 8
> Parity: None
> Stop bits: 1
> Flow control: Xon / Xoff

To find your COM port for the connection, check Device Manager > Ports (COM & LPT) and locate the Gadget Serial device and use the COM Port it shows.

Once connected, you will see a 'command prompt' in the HyperTerminal window. In this example we will use the SDL Test Program which is set up to output debug information. On the HyperTerminal screen type *./sdltest.gpe* and press Return.

After a few seconds the GP2X will load the program and display the options screen as normal. Confirmation text will have also appeared on the HyperTerminal window to show that the Serial Cable is working correctly. Running the individual tests will output text to HyperTerminal to show the start and end of each test. Once you are finished choose the *Quit* option to return to the GP2X Main Menu and close the HyperTerminal Program.

To use the debugging features simply use the *printf* function in your code, the below example will output text if the SDL_SetVideoMode function returns false:

```
screen = SDL_SetVideoMode( 320, 240, 32, SDL_SWSURFACE);
if(!screen)
{
    printf("SDL_SetVideoMode screen not initialised.\n");
}
```

You can use printf for a variety of tasks such as displaying variables or checking other code.

Credits, Thanks and other stuff

Credits and Thanks

Guyfawkes - GP2X User Guide. All content not credited below.
GP2X Wiki - GP2X Specifications
Efegea - for his very useful screen grab tool.
Richard Weeks - GP2X Unit graphics (GP2X Information section)
Soyburg and Overjupiter - Corrections to the user guide.
Igboo, David Flores, Tony Cardine - Additions to the user guide.
rhk - his makefile for the demo project.
Sonic-NKT - Screenshot from his Tux'N'Tosh GP2X theme

Other Stuff

If you notice any mistakes in the guide or have a suggestion on a new section to add please contact me by email at guyfawkes@NOSPAMgbaemu.com (remove NOSPAM) or on IRC - EFNet #gp2xdev, nick is Guyfawkes.

This guide may be freely distributed provided it is not modified in any way and it is not sold for a profit. Stores selling the GP2X may include this PDF on their own demo CD/DVD or include a printed version.

If you are going to mirror this guide on your own website please ensure that the latest version is always used as the latest guide may contain important changes not found in an earlier version. The latest version can always be found at http://archive.gp2x.de/cgi-bin/cfiles.cgi?0,0,0,0,23,933.

Translated versions of this guide will be available shortly. We currently have German, Spanish, French and Dutch versions planned. If you would like to translate to another language please contact me at guyfawkes@NOSPAMgbaemu.com (remove NOSPAM).

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